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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,459	02/10/2004	Johannes Antonius Maria Reinders	05235.0011.00US00	2000

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HOWREY SIMON ARNOLD & WHITE LLP  
C/O DIRECTOR OF IP ADMINISTRATION  
2941 FAIRVIEW PARK DR., BOX 7  
FALLS CHURCH, VA 22042

EXAMINER

MCKINNON, TERRELL L

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/774,459

Applicant(s)

REINDERS, JOHANNES  
ANTONIUS MARIA

Examiner

Terrell L Mckinnon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 14 and 16 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 8-13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5, 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohlberg (U.S. 3,799,045) in view of Bachofen (U.S. 5,919,406).

Sohlberg discloses a method of air conditioning comprising:

- an enthalpy exchanger (10), comprising a heat conducting walls (12) along both sides of which two respective media can flow in mutual enthalpy-exchanging contact, the wall being provided on at least one side with an impregnated hydrophilic material (column 3, lines 16-26) having little or no hygroscopic action (column 4, lines 27-37);
- the heat conducting wall is provided with surface area enlarging elements (14);
- the surface area enlarging elements are fins or the like;
- an indirect evaporative cooler comprising a heat conducting wall having a primary surface for heat exchange with a primary air flow and a secondary surface for heat exchange with a secondary air

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flow the secondary surface being provided with a hydrophilic cover layer having little or no hygroscopic action;

- the cover layer exhibiting one or more properties selected from the group consisting of: (a) a strong adhesion to each relevant surface; (b) a substantially complete covering of each relevant surface; (e) a moisture absorption capacity such that water absorbed during wetting spreads as a film the cover layer; (g) little susceptibility to thermal, chemical and biochemical degradation, erosion, growth of micro organisms and adhesion of dirt; (h) morphological, chemical and physical uniformity; (i) the ability to retain a buffer supply of water which is absorbed in the cover layer by capillary action (column 2, lines 57-64).

Sohlberg's invention fails to disclose a hydrophilic cover layer; wherein the cover layer is applied to relevant surfaces of the wall by chemical means by first activating each relevant surface physically, chemically or mechanically and subsequently forming the cover layer by, a chemical reaction from an aqueous solution.

However, Bachofen teaches a hydrophilic cover layer, wherein the cover layer is applied to relevant surfaces of the wall by chemical means by first activating each relevant surface physically, chemically or mechanically and subsequently forming the cover layer by, a chemical reaction from an aqueous solution (column 3, lines 44-53).

Given the teachings of Bachofen, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat conductive walls of

Sohlberg with a hydrophilic cover layer, wherein the cover layer is applied to relevant surfaces of the wall by chemical means by first activating each relevant surface physically, chemically or mechanically and subsequently forming the cover layer by, a chemical reaction from an aqueous solution.

Doing so would provide a surface coating for exchangers that will efficiently transfer heat for a given design requirement and configuration.

3. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohlberg (U.S. 3,799,045) in view of Bachofen (U.S. 5,919,406) as applied to claims above, and further in view of Tanaka et al. (U.S. 4,503,907).

Sohlberg's invention, as modified by Bachofen, discloses all of the claimed limitations from above except for the cover layer having a thickness of less than about 50 micrometers; and the cover layer is selectively applied to the wall by spraying onto selected surface areas.

However, Tanaka teaches the use of for the cover layer having a thickness of less than about 50 micrometers; and the cover layer is selectively applied to the wall by spraying onto selected surface areas (column 3, lines 34-40).

Given the teachings of Tanaka, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the heat conductive walls of Sohlberg with the cover layer having a thickness of less than about 50 micrometers; and the cover layer is selectively applied to the wall by spraying onto selected surface areas.

Doing so would provide an appropriate surface coating and alternate means of applying the coating to heat exchange surfaces.

***Allowable Subject Matter***

4. Claims 4, 6, 8-13 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention. Martin et al, Gerhart et al, Takahashi et al (2 patents) and Matsuzaki et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 703-305-0059. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

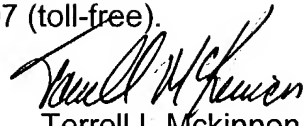
For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the

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Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Terrell L. McKinnon".

Terrell L. McKinnon  
Primary Examiner  
Art Unit 3743  
October 31, 2004